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LIVEABLE PEOPLE.

EVERYBODY who has ever been under a master or engaged by an employer, everybody who has ever been a member of a household or a family, must have a ready conception of the quality—liveableness. It may be said to express the whole range of those peculiarities of heart and of manners which are required to make association tolerable. Many men and women are of irreproachable character in all the great essentials, yet are not liveable people. Many are doubtful, or more than doubtful, in these respects, and yet are eminently liveable people. Perhaps, it may even be said that extreme 'correctness' is somewhat inconsistent with liveableness; while, on the other hand, failings and faults, within a certain limit, are necessary for it. We mean to say that 'the faultless monster whom the world ne'er saw,' would necessarily be an eminently unliveable person; because—this, at least, is how we suppose it is—when a person has succeeded in trampling out all the fires of error in his own constitution, he becomes unsympathising with, and intolerant of, the weaknesses of others. Equally, if he has succeeded in subjecting all his intellectual operations to the strict rule of logic, does he become unable to endure with patience the vague misreasonings of his fellow-creatures, and so grows disagreeable to them. It would appear as if he must not go beyond a fair medium in these respects, in order to be liveable.

All that makes servitude endurable to the servant—all that makes the position of a wife, or a child, or any other domesticated relative happy—all that makes a commercial partner, or an associate in any public matter, at ease in the common concerns, is bound up in this one word—liveable! How great, therefore, is the responsibility we are all under towards our neighbours in this respect! How unimportant that we should be infallibly right to a shade in our speculations, or even beyond reproach in our general habit of life, as compared with the duty we are under to make our personal contact and communings with our fellow-creatures a matter to them not of terror and pain, but of soft and happy feeling! The great practical questions about a man, after all, are, Has he been a gentle master? Has he been a kind husband and father? Has he been agreeable with others in their connected affairs? Has he, in short, diffused a pleasant atmosphere about him in his parlour-life, in the counting-room, in the workshop? For, with ninety-nine of every hundred of us, it is

almost solely in these things that we have any influence for good or for evil. Tell us not, then, of such a man, that he is skilled in affairs, or acute in debate; of another, that he can be safely trusted with the interests of great companies; of a third, that he has never yet made any decided mistake, or incurred any great obloquy in society. Tell us rather of them whether their employes shrink aside at their approach, whether their children are better pleased to be out of their presence or in it, whether the people they come in contact with in business feel constrained or at ease with them; for there lies their true importance.

We all, or most of us, wish to be progressive in some good way, to increase in intelligence, and to advance in worth; but we are extremely apt, in doing so, to neglect the duty of making ourselves more and more tolerable to our immediate connections; nay, we are liable, in our best efforts at progress, to go back in this respect. It somehow does not naturally occur to a man that, while rising in external respectability, he may be declining in some other capacity; but it is so. At the very time that large communities are ringing with the glories he has been achieving, some may be having occasion to say, Alas! but he is a cooling friend—he is a more rigorous parent—he is becoming a more exacting employer—as a husband, there is now no pleasing him. While he is a laurelled commander or poet in the eyes of the public, it may be that relatives, once made happy in his smiles, are pining under his coldness, or withering from the effects of his bad temper. In such circumstances, need we ask if his own true happiness is advanced? Will a world's acclaim ever make up for the averted looks of one, once fondly loved, however humble that one may be? Alas, no.

And this brings us round to the fact, that to be liveable is as important for ourselves as for others. Unless we make ourselves so, it is vain to expect that others will be liveable to us. There are people, not generally meaning ill—on the contrary, perhaps, rather estimable people in many respects—but who, not seeing this duty of being liveable, and taking no pains with it, become what is called unpopular—'peculiar'—in short, disagreeable; and who, finding themselves so without the consciousness of having done anything to deserve condemnation, are soured at society, and so go on, becoming more and more disagreeable. Now, such persons are very unhappy, and, when their substantial worth is considered, one cannot but be sorry for them. It is well worth

while to point out to them the real source of their misfortunes. Let them make liveableness a study and a practice, and they will soon find how much their own comfort depends upon it.

OLD INVENTIONS OR NEW DISCOVERIES?

MANY books have been written to prove that the various discoveries and inventions on which we specially pride ourselves as creations of our own times, are due to the ancients, to whom their admirers have not even scrupled to attribute the merit of having invented three of the most powerful agents in human progress and civilisation—printing, gunpowder, and steam. It must be remembered, however, that although the ancients were undoubtedly acquainted with many of our great inventions, they did not always understand how to apply them, using them often merely as philosophical toys, which had no higher purport than that of amusing or terrifying the vulgar. Disraeli, in his *Curiosities of Literature*, does indeed advance the opinion, that the Romans abstained *designedly* from putting their knowledge of printing into practice, from a fear that the invention, by diffusing amongst all classes independent notions of science and liberty, might exert a pernicious influence on the aristocratic monopoly of ideas, which they desired to maintain in respect to all things. But if such were their object in this one particular, they seem, at all events, to have failed in appreciating the uses of gunpowder and steam. The former never rose in their hands to be anything more than a powerful agent in producing pyrotechnical displays; while the latter, even in the estimation of philosophers, was only adapted for purposes of legerdemain. Hero of Alexandria amused his contemporaries, two thousand years ago, by letting them see how he could make light balls dance in the midst of a jet of steam; among many other ingenious toys, he invented an apparatus, consisting of a small sphere, which was moved on pivots by the action of steam generated in a heated boiler; and this primitive locomotive has, even in our own day, been judged so nearly capable of being applied to useful purposes, that some French mechanicians lately secured to themselves by patent the exclusive right of its application!

The history of the dawning of great inventions shews us, that nearly all our most important discoveries have been subject to repeated revivals and extinctions before they attained a character of permanence. Indeed, one author, M. Fournier, to whom we are indebted for much valuable information, asserts, in his recently published work, *Le Vieux-neuf*, that no industrial or scientific discovery can escape that common law of alternate decadence and revival which clings to all human invention, and frequently interposes many centuries of neglect between its birth and its fully developed vitality. We need not wonder, then, to meet in remote antiquity with the use and practice of many things whose origin we commonly refer to modern times; for, notwithstanding the presumed superiority of the present over previous ages, we may still exclaim, as Solomon did three thousand years ago: 'There is nothing new under the sun, for the thing that hath been is that which shall be, and that which is done, that which shall be done.'

Thus, for instance, the Chinese, who seem to have hovered on the confines of innumerable discoveries, from the earliest period of their history, were familiar, even in ante-christian ages, with modes of treatment and remedial agents which have only found their way into European practice within the last thirty years. Acupuncture, which was not known in Europe till towards the close of the last century, is described in the ancient medical works of China as an established mode of treatment among them; while in India and Japan, it has long ranked as one of the ordinary surgical applications, and is effected by means of

very slender and sharply pointed gold or silver needles, specially adapted for the purpose. The word *moxa*, which is now sufficiently familiar to British surgeons as a species of actual cautery, is the Chinese name of the plant whose dried leaves were originally employed by them in this process. It would appear, however, from Herodotus, that a similar mode of treatment was also practised among the nomadic tribes of ancient Libya, who had the habit of applying greasy wool to the heads or temples of their young children, and burning holes into the flesh, under the idea that the process was specially well adapted to prevent colds in the head, and to induce general vigour of body.

In regard to anæsthetics, the ancients knew far more than was known to modern nations till within the last quarter of a century, for the Egyptians and Greeks were acquainted with several substances which had the property of inducing insensibility to pain, by plunging those who partook of them into a lethargic sleep.

The *mandragora*, which is now banished from the *materia medica*, was used by the old Greek and Roman physicians; and Galen, Aretæus, Celsus, and others, ascribe to it strong soporific properties; while other writers, as Dioscorides and Pliny, state that those drinking a sufficient dose of it are rendered insensible to the pain of the surgeon's knife and the cautery. The Crusaders brought back from the east a knowledge of the hachisch; and in the middle ages, an infusion of mandragora was given to patients who were to undergo painful operations, in the same manner as it had been administered by the ancients, the effect being to produce a deep sleep, which rendered the patient wholly insensible to pain. Boccaccio, who wrote in the middle of the fourteenth century, relates that a celebrated surgeon of the faculty of Salerno, named Mazet, employed a soporific, obtained by distillation, to deaden the pain of operations; while the confraternity of thieves and highwaymen of that age were said to be acquainted with a secret means of rendering themselves insensible to the tortures of the rack; according to the account given of it in Le Brun's *Civil and Criminal Processes*, published in 1647, soap was the agent employed, this substance having, as was asserted, the property of 'stupifying the nerves.'

If we pass to other presumed novelties in medicine, whose beneficial effects, unlike those of anæsthetics, are mere matters of individual opinion, we still find older claimants to the title of inventors than those to whom we commonly ascribe the merit. Thus, for instance, we are assured by M. B. de Xivrey, that Paracelsus forestalled Hahnemann's system, by teaching that 'like should be treated by like, since like attracts like.' Avicenna, too, was in advance of the German doctor in another fundamental principle of homœopathy, for he treated diseases by administering infinitesimal doses of the deadliest poisons. According to some authorities, the great Descartes killed himself from too rigid an adherence to the homœopathic doctrine, that a disease should be treated by those agents which will produce analogous symptoms, for when he was attacked by a raging fever, he insisted upon taking large and repeated doses of alcohol—a mode of treatment which brought on violent hiccuping, and speedily terminated in death.

The kindred system of hydropathy must necessarily, in its simpler forms, have been coeval, if not antecedent, to all other modes of treating disease; but even in the more complex modifications of it, which Freisnitz has brought into such vogue in our own day, it may claim an ante-christian antiquity. Musa Antonius, the freedman and physician of Augustus, had the distinguished merit of curing his imperial master of a dangerous disease by prescribing the use of the cold bath. He was munificently rewarded for

the cure he had wrought, and honoured with a brazen statue, which, by order of the Roman senate, was to be placed near that of *Æsculapius*. The grateful emperor, moreover, exempted him from all taxes, and, as we may presume, vaunted his skill, and recommended him to his imperial household as the only physician to be trusted; at anyrate, he was called upon to treat the emperor's nephew and son-in-law, *Marcellus*, who had been publicly proclaimed his successor. Here, unfortunately for the patient and the system, hydrophobia killed, and did not cure; the poor youth, who was only eighteen, died, chilled to death by the cold-water douches administered to him by *Musa*; and with him died the system, which *M. Fournier* remarks it has taken twenty centuries to revive and restore to its former prestige. The cold-water cure had, however, a short-lived notoriety in *Nero's* time, when the *Marseilles* physician *Charmis* douched and drenched his patients most successfully with cold water, and in other respects prescribed medicines and modes of treatment not in use among his contemporaries.

If some of our most noted modes of treatment have thus had their periodic extinctions and revivals, so also have some assumed modern forms of disease. Thus, in the time of *Louis XIV.*, Paris was ravaged by a disease presenting the same symptoms and the same fatal termination, in the majority of its cases, as our cholera of 1832 and 1849. The malady was known, too, under the same name, for at that period every disease which was supposed to be of a contagious nature was characterised as a *cholera morbus*,—the word *cholera* indicating the eastern origin of the epidemics which then devastated Central Europe, for it is a compound of the Hebrew words *choi*, malady, and *ra*, malevolent or destructive. The influenza, too, under its French name of *La Grippe*, is an ancient form of illness, which, at longer or shorter intervals of time, has repeatedly visited most countries of Europe. In 1776, it prevailed in a very severe form in France, and was commemorated by a vaudeville played at Paris in the June of that year, and entitled *La Grippe*.

Even our most recent innovations in the province of spiritual manifestations can claim an antiquity as remote as any records which we possess of the existence of human life. Table-turning was known to the Egyptian priesthood, probably from the earliest periods of their sway; and from them the practice passed, in the course of ages, to the Romans, who, when the fashion of gyrating sieves had died away, actually took to *tripod-turning*, or, as we should now call it, *table-turning*! This practice they pursued with such faith in the interpretations which they attached to the varied movements of the rotating sieves or tables employed in the process, that it evoked the bitter invectives of *Tertullian*, who thundered forth his anathemas against all persons who, 'putting their faith in angels or demons, made goats and even "tables" prophesy to them.' The ancients, however, did not employ table-turning as an amusement to while away an idle hour, but hedged it in with religious ceremonials, and made it a grave and awe-inspiring element of their demoniacal worship. We find the ceremonies attending its use fully described in a report that has come down to us, of the confession extorted from certain conspirators who, in the time of *Valens*, had consulted a prophetic tripod preparatory to their attempt on the life of the emperor. 'We have constructed this accursed little table, most sublime judges,' they said, 'in the semblance of the Delphic tripod, and we have fashioned it with solemn incantations from the branches of a consecrated laurel. In accordance with ancient customs, we have surrounded it with divers ornaments, and consecrated it by means of imprecations, charms, and mystic verses; and this being done, we moved it.' After a further account of their pro-

ceedings, they go on to describe the mode in which they purified the apartment and house in which the table was to be turned, and the formation of the round metallic basin in which it stood, round the edge of which were engraved, at equal distances from one another, the twenty-four letters of the alphabet. Much depended on these letters, for it was by their means that the turning-table gave forth its answers to the questions that were put to it by the officiating priest, who, clothed in white, and bearing a sprig of vervain in his hand, noted down the individual letters which were successively struck by the rings suspended from the table, as they followed the direction of the motion imparted to it. The hands of women and children were esteemed most efficacious in communicating the motion required to give the first rotating impulse to the turning sieves or tables. In the case of *Valens's* conspirators, however, men alone officiated at the table-turning ceremony; and on this occasion the rings having struck the double Greek letter *Th* and the letter *E*, in reply to the inquiry who was to succeed to the empire, no further demand was made, since all present looked upon the answer as a verification of the common expectation, that *Theodorus* was destined to be the future emperor. It happened, however, that *Valens*, who, for different reasons, as we may well conceive, was equally anxious to be informed on this subject, had recourse soon afterwards to another form of divination, known as *alectrymancy*. Here a cock was the divining medium, and the process consisted in placing the bird within a circle of all the letters of the alphabet, well covered with grain, from which he was suffered to peck at his pleasure; the assistants carefully removing each letter from which the food had been eaten, and framing them into words. *Valens's* cock having laid bare the letters *Th, E, O, D*, there could be no doubt, it was thought, that *Theodorus* must be the name indicated, as the emperor knew its owner bore him a grudge; and he therefore settled the matter to his own satisfaction by having the obnoxious *Theodorus* put to death. It happened, however, that *Theodosius*, whom no one had thought of, succeeded to the empire, and thus supplied a triumphant proof of the efficacy of table-turning and cock-pecking auguries.

Travellers relate that they have found in *Cochin-China*, not merely table-turners, but men who, by the effort of their will alone, could propel heavy barges along the shore; and the Jesuit missionaries who have penetrated into the interior of Tibet, assure us that the lamas possess the secret of making tables not only turn, but actually fly through space. A Russian traveller, who recently witnessed this marvellous feat, says that it is generally performed with a view of aiding the lama in specifying the perpetrator of a theft or murder, regarding whom he has been appealed to by those most interested in the detection of the culprit. On the appointed day, the lama seats himself on the ground before a small square table, on which he lays his hand, while he reads in a low monotonous tone from a Tibetan book. At the end of half an hour, he rises, and lifting his hand from the table, extends his arm across it, and keeps his hand in the same position in which it had rested on the table, which in a few minutes is seen to rise, following the motion of the hand as he gradually raises it, till it has reached the level of his eyes. The lama then begins to move, on which the table is observed to commence a rotatory motion, the speed of which is increased until it appears difficult for him to follow it, even at a running pace. The table in the meanwhile, after having followed various directions, begins to oscillate, and soon falls. According to the testimony of the people of the district, the table generally inclines towards one direction more than any other, and thus indicates the point of the compass towards which the search must be conducted. The Russian

to whom we are indebted for this account, says that he was four times a witness of this extraordinary exhibition, which was pronounced a failure on the three first occasions by the lama, who declared that the stolen property, concerning which he had been consulted, could not be recovered. On the last trial, however, the table, after making a rapid series of gyrations through the air, fell at a spot where the most careful search failed to bring to light the lost property. On the following day, suspicion was excited by the fact that a man, living in the direction indicated, had killed himself, and on searching his hut, the stolen things were found. The most careful examination of the table employed failed to shew any connecting medium in the way of a concealed wire or string between it and the officiating lama. It ought to be observed that Father Kirchner, in speaking—two hundred years ago—of the magnetic force inherent in man, pretends that if a person were to place himself in a state of perfect equilibrium, in a light bark on the open sea, he would, like some new compass, be naturally disposed to turn his face towards the north pole. Our recent table-turners have asserted that this tendency to move towards the north has been observed to predominate when once the turning-tables had been put into motion.

Spirit-rapping, although less ancient than table-turning, as far as we know, can at all events lay claim to an antiquity of several centuries in Europe; for we have the testimony of a certain French captain, the Sieur Aubigné, that one night during the siege of Montau, in 1580, while he was stretched on his pallet, snatching a short rest before the resumption of his ordinary duty to go on guard, he received three sharp raps from an invisible hand, which were given with such vigour, that his companions, who were assembled round the watch-fire, hastened towards him, to see who was buffeting him so lustily. Having disregarded this first attack, the rappings were repeated with a noise and force that compelled him to rise; and as no hand could be seen, all present felt uneasy, and assured him that this must be a spiritual warning of some coming evil. The good sieur adds, 'that not liking to have it said that he had received communications from any evil spirit, he kept the thing secret until the news that his younger brother had been killed that same night, made him feel that the affair could no longer be concealed.'

Animal magnetism, as is well known, was practised by the priesthood of Egypt and Greece from the remotest antiquity; and where the patients, who sought alleviation from some bodily ailment, or who desired to receive directions from the divinity whom they invoked, were found to resist the means employed to throw them into a lethargic sleep, certain of the priests, known as *oneiropleta*, or sellers of dreams, slept for them within the precincts of the temple, and communicated to them the instructions they had received in their dreams from the divinity. The magnetic sleep was induced, we are told, by frictions, the imposition of hands, or by making the patients look fixedly at some object suspended from a height or on a mirror floating on the surface of a fountain.

St Augustine describes a priest of his own church and time who had the faculty of depriving himself entirely of sensibility, appearing as if he were dead, and feeling neither blows, pricks, nor burns, as long as he continued in this lethargic state. According to the testimony of the bishop, this Christian priest was in the habit of inducing these phenomena in his own person whenever he was urged to exhibit his extraordinary powers; acting in this respect precisely as the *oneiropleta* of the ancients had done before him, and as our own mesmerised subjects do at the present day. He answered the questions put to him, and fell into a state of ecstatic somnambulism, of which he remembered nothing when he recovered his ordinary

sensibility to outward impressions. Several ancient writers record instances of what we should now consider as cases of clairvoyance; and there can be no doubt, from the reports that have come down to us of the oracle at Delphos, that the Pythia spoke under the influence of magnetic agency. St Justin, in speaking of the sibyls, says: 'These women often gave utterance to grand and noble truths; but when the instinct which had guided them grew dormant, they no longer retained any recollection of the words they had spoken.'

When we descend from the domain of spiritualism to the simple matters of everyday-life, we find that the ancients were in the enjoyment of numerous luxuries and comforts which we commonly regard as the recent fruits of our own advanced civilisation. Thus, for instance, macadamised roads, in all save the name, were known in the Roman dominions 200 years before the Christian era, and were not merely limited to the vicinity of the capital, but were laid down in every province that succumbed to the valour of the republican arms. At an equally early age, the Roman senate, among various other decrees relating to the order and discipline to be observed in the city, enacted that men should give place to women in the streets, and leave them the unmolested use of the smooth line of pavement which every house-owner had to maintain in good condition in front of his own residence. Colossal sign-boards announced to the passers-by the business followed in the houses; while in the time of Plautus, notices of lost and found objects were displayed on placards written in letters a cubit long; and gladiatorial games, races, shows, and theatrical exhibitions were made public by huge boards displaying coloured representations of some of the most striking scenes or sights to be exhibited. The walls, doors, and palings were covered with these rude advertisements, which seem generally to have been drawn in some bright colour on a black or red ground. Although the Romans, like other ancient nations, were ignorant of printing as applied to the multiplication of books, they were familiar with the use of printing type, which their potters used for stamping names on their vases; and we are told that the Emperor Justinian, when he wished to append his signature to a public document, had recourse to a small wooden tablet, on which the letters of his name were cut, which he traced on the paper by following with the point of his style or pen the various contours of the carving.

But perhaps the strangest indication of the fact, that most of our assumed discoveries and innovations are mere *réhabilitations*, to use a French word, of pre-existing things, is supplied by the suggestion which is ascribed to Plato for 'the establishment of agencies for marriage, by means of which the qualities of each candidate for matrimony might be made known, and men thus have a better chance of procuring wives suited to their various characters.' This idea seems to have been lost for ages, but not wholly, for it revived in great force about a century ago, when some ingenious German, either from the depths of his own consciousness, or from a careful study of Plato's writings, established at Hamburg an office for the transaction of matrimonial affairs, in which advertisements for husbands and wives were always to be seen. There was not the slightest mystery or reserve assumed; and there is great frankness displayed both by the ladies and gentlemen who took part in these negotiations, for we are informed by one advertiser that 'she is fifty-nine years of age, and having buried her fourth husband within the previous three weeks, is anxious to meet with a good-looking healthy young man of twenty-six, as successor to her lamented partners. He need be under no trouble or care about money-matters, as she has plenty for both, and will leave him her universal legatee.' Another announces that he is possessed of independent means, having

upwards of 10,000 rix-dollars, and would not object to marry a widow who could bring about 60,000 marks as her portion, provided she had no encumbrances, and was not very old. He begs it to be understood, however, that no one need apply who is not able to superintend all household matters, or who cannot sew well enough to dispense with the services of a work-woman in her house. We do not know what success attended the establishment; but it is certain that several similar institutions flourished under the Directory at Paris, their success being perhaps in a great measure due to the anomalous condition of society at the time, when persons of low birth rapidly thrust themselves into prominent places, and belonging to no special circle or sphere of society, had no means of forming suitable connections for themselves or their children by the ordinary routine of social intercourse.

We are apt to imagine that our own is *par excellence* the age of humbug and advertisement, but even in these respects we must hide our diminished heads, and admit that we are only following in the steps of past generations. The Chinese practise—as their forefathers did ages before them—the puffing system in all its modifications. The doctors in China apply the art with great pertinacity, and the suffering invalid is invited to enter the dwelling of one of the medical fraternity by seeing suspended above the door a white or black sign-board, engraved with golden or brightly coloured letters, and setting forth that within this Temple of Repose, or Garden of Delight, or some such title, dwells 'the curer of all maladies, as may be proved by an inspection of the *bjan*, or memorial slate,' on which are inscribed the names of the patients, and the diseases which the wonderful man has cured. These *bjans* are transmitted as heir-looms from father to son; and where no honour of this kind exists in a family, it is said that they are occasionally bought, or fabricated to suit special cases. The presentation of a *bjan* is made as public as possible, the giver and the recipient being equally anxious, it would appear, to proclaim the fact. Placards posted at the corners of the neighbouring streets announce its expected arrival, which is ushered in with music and dancing; the *bjan* being carried on these occasions in a sedan-chair, attended by the giver and his special friends and retainers. The same system of puffing seems to be carried through every profession and trade in China. We need not, however, look so far for prototypes or rivals in the art of advertising our stock in trade, whether in the way of talents or more transferable goods, for the practice had its adepts in France long before it became common among ourselves. The Parisian tradesman of two hundred years ago presented his customers, before they left his shop, with an embossed card, or engraved metallic plate, on which were inscribed his name and address, with the names of his principal titled patrons on the one side, while the reverse generally displayed a pictorial representation of some of the articles in which he trafficked. A century nearer our own time, the 'Warrens' and 'Moses' of those days employed the highest talents of the day to celebrate the excellences of their goods, for the philosopher Diderot declares that he was far better paid for the panegyrics which he had been engaged to compose on a special kind of pomatum, than for his most elaborate articles in the *Encyclopédie*.

THE WILD HUNTRESS.

CHAPTER LXXVII.—THE SURPRISE.

The white cloud—a puff of powder-smoke—had scarcely scattered in the air, when a dark mass appeared upon the plain, emerging from the sulphurous vapour. It was a troop of horsemen—the warriors of Wa-ka-ra. On giving the signal, they had issued forth from the lower cañon, and were coming on at a gallop.

They were too distant for us to hear their cheering cheer; but from right and left came a double shout—a war-cry answering to our own—and the moment after a stream of dusky forms was seen pouring down each bluff, through the sloping gorges that led to the plain.

We could hear the shout that announced the astonishment of the Arapahoes. It betokened more than astonishment: there was terror in its wild intonations.

It was evident that they had been taken altogether by surprise; having no suspicion that an enemy was near—least of all the dreaded foe who was now rushing forward to surround them.

The red men are never betrayed into a panic. Accustomed from earliest youth to war with all its wiles, they are ever prepared for a *stampede*. It is the system they themselves follow, and are ever expecting to be practised against them. They accept the chances of attack—no matter how sudden or unforeseen—with all the coolness of a contest premeditated and prearranged. Even terror does not create confusion in their ranks—for there are no ranks—and in conflicts with their own race, combinations that result from drill and discipline are of little consequence. It is usually a fight hand to hand, and man to man—where individual prowess prevails, and where superior personal strength and dexterity conduct to conquest. It is for this reason that the scalp-trophy is so highly prized: it is proof that he who has taken it must have fought to obtain it. When 'hair is raised' in a night-attack—by the chance of an arrow or a bullet—it is less esteemed.

By the laws of Indian warfare, the stratagem of assassination is permissible, and practised without stint; but a *coup* of this kind is far less glorious, than to slay an enemy in the open field, and under the broad glare of the sunlight. In conflicts by day, strategy is of slight advantage, and superior numbers are alone dreaded.

It was the superior numbers of their Utah enemies that caused terror in the ranks of the Arapahoes. Otherwise, they would not have regarded the mode of attack—whether their assailants advanced upon them in a single body, or in four divisions, as they were doing.

Indeed it was merely with a view of cutting off their retreat, that the Utah chieftain had adopted the plan. Had he not taken the precaution to approach from all sides at once, it would have been necessary for him to have waited for the night, before any attack could have been made. In daylight, it would have been impossible to get even within shot-range of the enemy. The Arapahoes were as well mounted as the Utahs; and perceiving their inferiority in numbers, they would have refused the fight, and ridden off, perhaps, without losing a man.

The strategic manœuvre of the Utah was meant to force the Red-Hand to a conflict. This was its purpose, and no other.

It was likely to be successful. For the Arapahoes, there seemed no alternative but fight.

The attack, coming from four points at one and the same time, and by superior numbers, must have caused them fear. How could it be otherwise?

It failed, however, to create any remarkable confusion. We could see them hurrying around the butte, in the direction of their *cavallada*; and, in an incredibly short space of time, most of the warriors had leaped to horse, and with their long spears towering high over their heads, had thrown themselves into an irregular formation.

The plain, at this moment, presented an animated spectacle. He upon the summit of the butte, if still alive, must have viewed it with singular emotions. The painted Arapahoes clustered around their chief, and for the moment appearing in a close crowd, silent and immobile: from north, south, east, and

west, the four bands of the Utahs approaching in rapid gallop, each led by its war-chief; while the 'Ugh! aloo!' pealing from five hundred throats, reverberated from cliff to cliff, filling the valley with its vengeful echoes! The charge resembled a chapter from the antique—an onslaught of Scythians!

Would the Arapahoes await the shock of all four divisions at once? All were about equally distant, and closing in at equal speed. Surely the Red-Hand would not stay to be thus attacked?

'*Carrambo!* I wonder they're not off before this!' shouted Archilete, who was galloping by my side.

'Ha, yonder!' added he, 'a party on foot making from the *almos*. They are waiting for them to come up—that's what's been detaining them. *Mira!*'

As the Mexican spoke, he pointed to a small tope of cotton-woods, which grew isolated about three or four hundred yards from the mound. Out of this was seen issuing some fifteen or twenty Arapahoes. They were on foot; except three or four, that appeared to be carried by the others.

'Their wounded!' continued the trapper. 'They've had them under the bushes, to keep the sun off them, I suppose. *Mira!* they are meeting them with horses! They mean fight.'

A party with led-horses were seen galloping out from the base of the butte, evidently to take up the men on foot—who were still hurrying towards their mounted comrades as fast as the nature of their duty would permit them.

There were several little knots of the Indians on foot—each, no doubt, in charge of a disabled comrade.

One crowd appeared to encircle a man who was not borne upon their shoulders, but was moving forward on his own feet. The violent gesticulations of those who surrounded him caught our attention. The man was evidently being menaced and urged forward—as if he went against his will.

'*Carrai!*' exclaimed the Mexican, 'he is not one of their wounded. A captive! One of your *camarados*, is he not?'

'No doubt of it,' I replied, at that moment equally guided to the conjecture.

'Wagh!' exclaimed the trapper, 'the poor fellow's scalp's in danger just now. I wonder they take all that trouble to get him away alive!—that puzzles me, *amigo!* I think it high time they looked to their own lives, without being so dainty about that of their prisoner. *Santisima Virgen!* As I live, there's a woman among them!'

'Yes—I see her—I know her. Her presence explains why they are taking him alive.'

'You know her!'

'And him too. Poor fellow! I hope she will befriend him; but'—

I was hindered from continuing the explanation. Just at that moment, the led-horses were rushed up; and those in charge of the wounded were seen to spring to their backs. Here and there, a double mount proclaimed that the disabled men were still capable of making a last effort for their lives.

All had got upon their horses, and in a straggling crowd were making to join the main band, when just then one of the horses that carried two men was seen to swerve suddenly from the line, and, heading up the valley, come galloping in our direction. The horse appeared to have taken fright, and run away from the others; while the men upon his back were wriggling and writhing about, as if trying to restrain him!

At the same instant, half-a-dozen mounted Arapahoes shot forth from the crowd, and with loud yells started in pursuit of the runaway!

The double-loaded steed—a powerful animal—kept on his course; and not until he had approached within three or four hundred paces of our own front, could I account for this strange manoeuvre. Then was

I enabled to comprehend the mysterious escapade. The rider upon the croup was Frank Wingrove!

He upon the withers was a red Arapaho, and the bodies of the two men appeared to be lashed together by a raw hide-rope; but, in front of the Indian, I could perceive the muscular arms of the young backwoodsman tightly embracing the body of the savage, while with the reins in his fingers he was guiding the gallop of the horse!

With a shout of joy, I hailed the escape of my comrade—now no longer problematical. In a score of seconds more, we should meet. The pursuers, satisfied that his recapture was hopeless, without risking their own scalps, turned with a despairing shout, and galloped back.

Wingrove was near enough to hear the cry of encouragement that passed from my lips; and, soon recognising me, despite the disguise of the serape, headed his horse directly towards me.

'Hooraw, capt'n!' cried he, as he came up. 'Hev you e'er a knife to cut me clar o' this Indyan? Durn the nigger! I've got him in a leetle o' the tightest fix he's been in for a while, I reck'n. Dog-gone ye! keep still, ye skunk, or I'll smash every rib in yur body! Quiet now!'

During all this time, the Indian was making the most strenuous efforts to free himself from the grasp of his powerful adversary—now endeavouring to throw himself down from the horse, anon trying to turn the animal in an opposite direction. But the thongs intended to secure his captive—and which had no doubt been wound around both by a third hand—had become bonds for himself. Wingrove, who had by some means wrenched his wrists free from their fastenings, had turned the tables upon his captor, by transforming him into a captive!

I chanced to have no knife; but the Mexican was supplied with the necessary article; and, drawing it from its sheath, shot past me to use it. I thought he intended to cut the thongs that bound the two men together; and so did he; but not till after he had performed another operation, which consisted in plunging his blade between the ribs of the Arapaho! At the stab, the Indian gave utterance to his wild death-shout. At the same instant his head coggled over upon his shoulder, his body relaxed its muscular tension, and hung limp over the raw hide-rope!

A snig of the red blade severed the thong; and the Indian's body sliding down from the shoulder of the horse, fell with a dull dead sound upon the turf!

'Here, *Americano!*' cried the trapper, holding out the ensanguined knife to Wingrove; 'take this weapon for want of a better. Let us on! See, the *picaros* are making off. *Vamos, nos vamos!*'

The little incident had delayed us but for a very short while—perhaps not half a minute; but as we returned to the charging gallop, most of our party had passed us; and the foremost were already within rifle-range, and opening fire upon the Arapahoes.

CHAPTER LXXVIII.

THE CHARGE.

The horsemen that had forged ahead, for awhile hindered me from seeing the enemy. The Utahs had halted, and were discharging their guns. The smoke, from their shots, shrouded both allies and enemy; but from the fact of a halt being made, I fancied the Arapahoes were making stand by the butte?

It was not so. After the first round of shots, the firing ceased; and the Utahs again went charging onward. The Arapahoes had given way, and were fleeing down the valley. There they must meet *Wa-ka-ra!*

And this, or something like it, was their intention. With the four divisions closing upon them from all sides at once, they saw there was no chance of saving themselves, except by making a desperate charge on

some one singly, in the hope of causing it to yield, and thus open for them a way of escape. They had no difficulty in making choice. The band of Wa-ka-ra was between them and their own country. It was the direction in which they must ultimately retreat; and this had decided them to take down the valley.

A slight swell in the plain, which we were at that moment crossing, gave me a view of the retreating Arapahoes. In the distance, I could see the band of Wa-ka-ra coming on at full speed. In a few seconds would meet in shivering charge these mortal foes.

The Utahs on our side were again urging their horses to utmost speed. Well mounted as were myself and companions, we were unable to overtake them.

Those that came from right and left had suddenly swerved from their course; and in two converging lines were sweeping down the valley to the assistance of their chief.

We passed close under the edge of the butte. In the excitement of the chase, I had almost forgotten to look up, when a shrill shout recalled to my memory the captive on the cross. The cry came from the summit, from Sure-shot himself. Thank Heaven! he lived!

'Hooza! hoozay!' shouted the voice. 'Heaving speed yees, who's ever ye be! Hooza! hoozay! Arter the verming, an' gie 'em goes! Sculp every mother's son o' 'em. Hooza! hoozay!'

There was no time to make reply to these cries of encouragement. Enough to know that it was our old comrade who gave utterance to them. It proved he was still safe; and, echoing his exulting shout, we galloped onward.

It was a fearful sight to behold the two dark bands as they dashed forward upon one another—like opposing waves of the angry ocean. Through the horsemen in front of me, I could see the meeting, and hear the shock. It was accompanied by wild yells—by voices heard in loud taunting tones—by the rattling of shields, the crashing collision of spear-shafts, and the sharp detonations of rifles.

The band of Wa-ka-ra recoiled for a moment. It was by far the weakest; and had it been left to itself, would have sustained defeat in this terrible encounter; but the Utahs were armed both with rifles and pistols; and the latter playing upon the ranks of the Arapahoes, were fast thinning them. Dusky warriors were seen dropping from their horses; while the terrified animals went galloping over the field—their wild neighs adding to the uproar of the fight.

There was but one charge—a short but terrible conflict, and then the fight was over. It became transformed, changed almost in an instant, to a disorderly flight—the remnant of the prairie horsemen heading down the valley, followed by the four bands of the Utahs—who, having now closed together, pressed onward in the pursuit, still yelling their wild *Ugh! alloo!* and firing shots at intervals as they rode within reach of their flying foes.

Neither Wingrove nor I had an opportunity of taking part in the affray. It was over before we could ride up; and indeed had it been otherwise, neither of us could have been of much service to our allies. Painted as both were, and in full war-costume—in other words, naked to the breech-clout—we could not have distinguished friends from foes; and it was this that occasioned us to halt.

We drew up on the ground where the collision had occurred with the band of Wa-ka-ra. We looked upon a spectacle that might at any other time have horrified us. A hundred bodies lay over the sword all dead. There were Utahs, as well as Arapahoes; but, though we could not distinguish the warriors of the two tribes in the confusion of the fight, there was no difficulty in identifying their dead. There was a signal difference in the aspect of the slain Indians. Around the skulls of the Utahs, the thick black tresses were still clustering, while upon the heads of

the Arapahoes there was neither hair nor skin: every one of them had been already scalped!

Wounded men were sitting up, or propped against dead bodies—each with two or three comrades bending over him. Horses were galloping around, their lazos trailing at will; and weapons of every kind—spears, shields, bows, quivers, and arrows—were strewn over the sward. A group of about a dozen men appeared at some distance, clustered around a particular object. It was the dead body of a man—a chief, no doubt? Not without feelings of apprehension did I approach the spot. It might be the noble Wa-ka-ra?

I rode up, and looked over the shoulders of those who encircled the corpse. A glance was sufficient to put an end to my apprehensions. The body was covered with blood, and pierced with many wounds. It was frightfully mutilated; but I was able to identify the features as those of Red-Hand, the chief of the Arapahoes! Scarred and gashed though it was, I could still trace those sinister lines that in life had rendered that face so terrible to behold. It was even more hideous in death; but the Utahs who stood around no longer regarded it with fear. The terror their dread foe had oft inspired within them, was now being retaliated in the mockery of his mutilated remains!

The Mexican had learned that Wa-ka-ra was still safe, and heading the pursuit. Having myself no further interest in the scene, I turned away from it; and, with Wingrove by my side, hurried back towards the butte.

CHAPTER LXXIX. TRAGIC AND COMIC.

Some words passed between us as we rode back. For my companion, I had news that would make him supremely happy. Our conversation turned not on that. Soon enough, thought I, when they should come together. Let both hearts be blessed at the same time.

Ah! how my own was bleeding! Little suspected the Spanish hunter how his tale had tortured me!

Wingrove, in brief detail, gave me the particulars of his escape. Like myself, he had been captured, without receiving any serious wound. They would have killed him afterwards, but for the interference of the Chicaw—who by some means had gained an ascendancy over the Red-Hand.

In the breast of this desperate woman burned alternately the passions of love and revenge. The former had been for the time in the ascendant; but she had saved the captive's life, only in the hope of making him *her* captive. She had carried him to the copse, where he had passed the night in her company—one moment caressed and entreated—in the next reviled and menaced with the most cruel death!

In vain had he looked for an opportunity to get away from her. Like a tigress had she watched him throughout the live-long night; and it was only in the confusion, created by our sudden approach, that he had found a chance of escape from the double guardianship in which he had been held. All this was made known in a few hurried phrases.

Sure-shot! we were within speaking distance; but who could have identified the Yankee in such a guise? The tri-colored escutcheon I had myself so lately borne—the black face, shoulders, and arms—the white circle on the breast—the red spot—all just as they had painted me!

'Jeeshosphet an' pigeon-pie!' cried he, as he saw us approach; 'air it yeou, capt'ing? an' Wingrove teoo!'

'Yes—brave comrade! Your shot has saved us all. Patience! we shall soon set you free!'

Leaping down from our horses, we hurried up the sloping path. I was still anxious about Sure-shot's safety, but in another moment my anxiety was at an end. He was yet unscathed.

Like myself, he had received some scratches, but no wound of a dangerous character. Like myself, he had died a hundred deaths, and yet lived!

His gleesome spirit had sustained him throughout the dread ordeal. He had even joked with his cruel tormentors!

Now that the dark hour was past, his *jeux d'esprit* were poured forth with a continuous volubility. No—not continuous. At intervals, a shadow crossed his spirit, as it did that of all of us. We could not fail to lament the fate of the unfortunate Hibernian.

'Poor Petrick!' said Sure-shot, as we descended the slope, 'he weer the joyfulest kimrade I ever hed, an' we must gi' him the berril o' a Christyan. I wonder now what on airth them verming hes done wi' him? Wheer kin they hev hid the body?'

'True—where is it? It was out yonder on the plain? I saw it there—they had scalped him.'

'Yees—they sculped him at the time we weer all captered. He weer lying jest out their last night at sundown. He ain't theer now; nor hain't a been this mornin', or I'd a seed him. Whet do ees think they've done wi' him anyhow?'

The disappearance of the body was singular enough. It was certainly removed from the spot where it had lain; and was now nowhere to be seen!

It was scarcely probable that the wolves had taken it—for the Indians had been all night upon the ground; and their camp-fires were near. True, the *coyotes* would have cared little for that; but surely the brutes could not have carried the body clear off? The bones at least would have remained? There were none—not a trace either of body or bones!

We passed around the butte, and made search on the other side. There was no dead body there—no remains of one!

Ha, the river! It swept past within fifty yards of the mound. It would account for the disappearance of the corpse. Had the Indians thrown it into the stream?

We walked towards the water, half mechanically. We had little expectation of finding the remains of the unfortunate man. The current rushed rapidly on: the body would have been carried along with it.

'Maybe it mout hev lodged somewheres?' suggested Sure-shot. 'Ef we shed find it, capting, I'd like to put a sod over him, for old times' sake. Shell we try down the stream?'

We followed the bank downward. A little below grew willows—forming a selvage to the river's edge. Their culms curved over till the long quivering leaves dipped into the water. Here and there were thickets of them extending back into the plain. Only by passing through these could the bank of the river be reached.

We entered among the willows, Wingrove going in the advance. I saw him stoop suddenly, as if to examine the ground. An exclamation escaped him, and the words:

'Someb'dy's crawled through hyar, or been dragged through—one.'

'No!' continued he after a moment; 'he's not been dragged; he's been creepin' on his hands an' knees. Look thar! the track o' a knee, as clear as daylight; an', by the 'tarnal! it's been covered with broad-cloth. No Indyen ked a made that sign!'

We all bent over to examine the sign. Sure enough, it was the track of a man's knee; and the plastic mud exhibited on its surface a print of fretted lines which must have been made by coarse threadbare cloth!

'By Gosh!' exclaimed Sure-shot, 'that eer's the infantry overall—the givernment cloth to a sartingty. Petrick's been about heer. Lordy, tain't possyble he's still livin'!'

'Shure-shat! Shure-shat! Mother ov Moses! is it yersef I hear?'

The voice reached us in a hoarse whisper. It appeared to rise out of the earth!

For some moments, we all stood as if petrified by surprise.

'Shure-shat!' continued the voice, 'wont yez help me out? I'm too wake to get up the bank.'

'Petrick, as I'm a livin' sinner! Good Lordy, Petrick! wheer air ye? Tain't possyble yeer alive?'

'Och, an' shure I'm aloive, that same; but I'm more than half ded, for all that, an' nearly drowned to boot. Arrah, boys! rache me a hand, an' pull me out—for one ov my legs is broke.'

All together we rushed down to the water—whence the voice appeared to come. Under the drooping willows, where the current had undermined the bank, an object was seen in motion—a fearful object to look upon. It was the encrimsoned skull of our scalped comrade!

His body was submerged below the surface; his head was alone visible—a horrid sight!

The three of us leaped at once into the stream; and, raising the poor fellow in our arms, lifted him out on the bank. It was as he had alleged. One of his legs was broken below the knee; and other frightful wounds appeared in different parts of his body. No wonder the Indians had believed him dead, when they stripped off that terrible trophy!

Notwithstanding the ill usage he had received, there was still hope. His wounds, though ugly to look upon, were none of them mortal. With care, he might recover; and, taking him up as tenderly as we could, we conveyed him back to the butte.

The Arapahoes had left their *impedimenta* behind them—blankets and robes at discretion. With these, a soft couch was prepared under the shadow of the wagon; and the wounded man placed upon it. Such rude dressing as we were able to give, was at once administered to his wounds; and we found new joy in the anticipation of his recovery.

His disappearance, from the spot where he had been left for dead, was explained. He had 'played 'possum,' as he himself expressed it. Though roughly handled, and actually senseless for a time, he had still clung to life. He knew that the Indians believed him dead, else why should they have scalped him?

With a faint hope of being left upon the field, he had lain still, without stirring hand or foot; and the savages, otherwise occupied, had not noticed him after taking his scalp. By some accident, his hands had got over his face; and perceiving that these screened his countenance from observation, he had permitted them to remain so. With half-opened eyes, he could see between his fingers; and note many of the movements that were passing upon the plain in front of him—all this without the Indians having the slightest suspicion that he lived!

It was a terrible time for him—an ordeal equal to that endured by Sure-shot and myself—for every now and then some half-drunken savage would come staggering past; and he knew not how soon some of them might stick a spear into him, out of mere wantonness!

On the arrival of night, his hopes had revived; and the cool air had also the effect of partially restoring his strength. The savages, carousing around their fires, took no notice of him; and, as soon as darkness was fairly down, he commenced crawling off in the direction of the river.

He had a double object in going thither. He was suffering from horrid thirst; and he hoped there to find relief as well as a better hiding-place. After crawling for more than an hour, he had succeeded in reaching the bank; and, taking to the water, he had waded down, and concealed himself under the willows in the place where we had found him.

Such was the adventure of the *ci-devant* soldier, Patrick O'Tigg—an escape almost miraculous!

As if fulfilling the laws of dramatic justice—that the farce should succeed the tragedy—our attention was at this moment called to a ludicrous incident.

The Mexican trapper had ridden up, and halted beside the wagon, when all at once his eyes became fixed upon an object that lay near at hand upon the grass. It was the black silk hat of the ex-rifeman, already mentioned in our narrative.

After gazing at it for a moment, the Mexican slid down from his horse, and hobbling towards the tile, took it up. Then uttering a fierce *Carajo*, he dashed the hat back to the ground, and commenced stamping upon it, as if it had been some venomous serpent he desired to annihilate.

'Hilloo! theer, *hombre!*' shouted Sure-shot. 'What the ole scratch air ye about? Why, ye yellor-bellied fool, thet's my hat yer stompin' on.'

'Your hat!' echoed the trapper in a contemptuous tone. '*Carrambo, señor!* you should be ashamed of yourself; any man to wear a silk hat! Wagh!'

'An' why ain't a silk hat as good's any other?'

'*Maldita sea!*' continued the trapper, taking the wooden leg from his waist, and hammering the hat with it against a stone—'*maldito sombrero!* but for that accursed invention, we poor trappers wouldn't be as we are now. *Carrambo!* it's fetched beaver down to a plew a plug; while only ten years ago, we could get six pesos the skin! Only think of that! *Carai-i-i!*'

Pronouncing this last exclamation with fierce asperate, the incensed trapper gave the unfortunate hat one more blow with his timber leg, and then, spurning the battered tile from his toe, hobbled back to his horse!

Sure-shot was disposed to be angry, but a word set all right. I perfectly comprehended the nature of the trapper's antipathy against silk hats, and explained it to my comrade. In their eyes, the absurd headgear is more hideous than even to those who are condemned to wear it—for the trappers well know that the introduction of the silk hat has been the ruin of their peculiar calling.

'Twan't much o' a hat, atter all,' said Sure-shot, reconciled by the explanation. 'It blonged to the sutler at the Fort, an' yee see, captin', as we left theer in a leetle bit o' a hurry, I couldn't lay my claws on my own ole forage-cap; so I took the hat in its place: thet's how I kin by the thing. But heer's a hat: preehaps, mister, this heer'll pleeze ye, will it?'

As Sure-shot put the question, he took up the plumed bonnet of an Arapaho warrior—which had been left lying among the rocks—and, adjusting the gaudy circlet upon his head, strode backward and forward over the ground with all the swelling majesty of an Indian dandy!

The odd-looking individual and his actions caused the laughter of the by-standers to break forth in loud peals. The Mexican fairly screamed, interlarding his cackinnations with loud '*santissimas!*' and other Spanish exclamations; while even the wounded man under the wagon was unable to restrain himself at the mirth-provoking spectacle.

NORFOLK BROADS AND THEIR WATER-FOWL.

IN TWO CHAPTERS.—CHAPTER I.

GIVEN a map of the eastern coast—if you are travelling, the railway map at the beginning of Bradshaw will answer your purpose very well—and draw thereon an imaginary triangle, having for its angles Norwich, Lowestoft, and Happisburgh—always pronounced, and frequently written *Hasborough*—and you have the district of the Broads. Next, what are 'the broads?' and where have you met with this word, which is strictly local, before? If you are a reader of Southey, you may remember it from the following note in his *History of Brazil*: 'This is a provincial term,' he says, 'used in Norfolk

and Suffolk, to designate those parts of a river where the stream expands to a great width on either side. Broads, therefore, I have used in this sense, as distinguished from lakes—which are greater receptacles of water formed by one or more streams, but having the outlet generally much larger than the inlet—and from lagoons, by which I am to understand lakes lying near a river, and formed by it.' I have extracted this note, as being a clear description of our broads, which appear under these three forms, though Southey only allows them the first. Their most common form is the lagoon. They vary in dimension from the small pool called a 'pulk,' to the wide shallow lake, such as Hickling Broad, which has an area of more than four hundred acres of water, although it is, except in a very few spots, not more than four feet and a half deep. The principal are, Hickling Broad, Horsey Mere, and Heigham Sounds, Lake Lothing, Oulton Water, Barton, Rollesby, and Filby Broads, Fritton, South Walsham, Rantworth, and Hoveton Broads, and lastly, Breydon Water, formed at the back of Yarmouth, by the confluence of the Waveney, the Bure, and the Yare.

The face of the country is vastly changed since Sir Thomas Browne made his excursions from Norwich to see otters asleep by Surlingham Broad, and, like later philosophers, experimentise unsuccessfully in spontaneous generation.* In his day, with the exception of a few spots here and there, the whole triangle was one continuous range of marshes, through which three sluggish rivers flowed to the sea, by no means in any hurry to get there, and spreading themselves out into broads in every direction; low isolated hills sloped down to the margin of the marsh, where high sedges made a shelter for the wild-fowl; further on, lay a broad, whose approach grew more and more of a quagmire, till it would have been a puzzle to say where the land finished and the water began. Such a region, lying, too, towards the most eastern seaboard of the kingdom, must be a stronghold for the water-fowl. These birds do not haunt an endless swamp, nor very deep waters; they love the furze-clad hill, the marsh, with perhaps thickets of dwarf trees at the edge of the broad, where they find abundance of fish among its tangled water-weed, and sedgy islets dotted on its surface for their nesting-places. What a haven for the storm-beaten pilgrims coming from the ocean! No wonder they should fold their weary wings, and set up their rest in it—that they should people these solitudes, and make them vocal with rushing wings, with clangour of cry and call. I think if good Sir Thomas were to rise, he would hardly recognise his familiar haunts. Bogs have been drained, rivers banked up, large tracts of country have been reclaimed and fertilised, and over what was in his time a pathless swamp, the train now snorts and rattles to the sea-side, past market-towns and villages. Still, where at all left to itself, our district obstinately keeps up its old character. You pass at once from rich uplands into an immense morass, inaccessible in most parts, except to the hardy marshmen, and those quite as hardy naturalists or botanists who think little of wading in mud to their knees, with a fair chance of a settlement up to the neck. No wood, except low thickets, and carrs,† with dwarf alders and willow, in the distance, and just a birch or two scattered here and there over the swamp. Low plashy reaches, varied with bog, and interspersed with 'pulks,' seem to stretch miles away, while under the low sky-line a broad glitters in the sun. The plover whistles overhead, a merry moorhen whisks past you, while flocks of water-fowl stand in solemn confabulation together, and then stream off in long lazy flight from pool to

* In plashes or standing-water, we have met with *vermes setacei*, or hard worms, but could never convert horse-hairs into them by laying them into those same waters.

† Local name for a small wood.

pool. Not a pretty country, I agree with you—no charms here for the lover of fine scenery, but rich in interest, if you are botanist, zoologist, or, above all, ornithologist.

In our triangle, we may fairly reckon the winged people as the aborigines of the soil, and they suffer the common fate of aborigines: they are persecuted without mercy, their nesting-places broken up, their eggs destroyed, and their young taken. The rustics have their guns, and value every bird and egg at just the price that they will bring; the railway is close at hand to carry off the victims to the London market. With enemies on all sides, and no protection, of course, many species which formerly bred here are now only visitors, while others once common have become a mere tradition. Sir T. Browne, in his *Account of Norfolk Birds*, written about 1665, describes several, as the osprey, the fen-eagle, the crane, &c., which we have entirely lost. The bustard, which was, he says, 'not unfrequent in the champion and fieldy part of the country,' lingered till within the last twenty years, and is now extinct; the last survivors of the tribe were seven or eight solitary females. Within my own memory, the decrease or complete extinction of species has gone on at a rapid rate. Many which were comparatively plentiful at the beginning of the century, are waning fast; some have entirely disappeared; and before its close, I fear, some of the greatest ornaments to our fauna—the grebe and ruff, for instance—will vanish;* for when once the numbers of a species are very much thinned, it is soon lost entirely; and this depopulation is carried on at a rapidly increasing rate in every region of the globe. Increase and multiply, was God's command when he made all the fowls of the air to enrich and beautify his creation; kill and destroy, is man's cruel fiat against the most innocent and lovable, as the most ornamental of all his fellow-creatures. Now-a-days, any rare visitor must bear a charmed life if he is to penetrate into the interior, for the boatmen keep a sharp look-out, and a gunshot is his welcome to our inhospitable shores. I grieve to say that naturalists, while they deplore the loss of varieties in British birds, occasion the gaps themselves. Many of them seem to think that a rare or beautiful bird is made for the express purpose of being displayed under a glass-case, with his mate and their brood, all stark and stiff, like knight, dame, and children on an old monument. Yet, after all, are these stuffed specimens any more the real creature, than a mummy is what it was as a living, breathing human being? Where are the marvels of instinct, the quick eye, the exquisite grace of bird-action and bird-motion, quaint gestures, fluttering happiness—all the hundred things that go to make up a bird, beside his skin and feathers? Ah! if the bird-collector had learned anything of all this, he would know that a living sparrow is better than his stuffed eagle. But I shall dismiss this question, knowing I should grow ill-natured upon it, and, what is worse, become tedious in the bargain.

The generic term water-fowl includes all the families of the order *Natatores*, or *Palmipedes*, as they are often designated, from their webbed feet. Nearly one-third of our British birds rank in this order, and almost all of these belong to the little district of the broads. By way of beginning, I intend to give a good word to an injured palmipede, on whom every writer has bestowed bad ones without just cause. He certainly owns a huge appetite, and bolts his food; but so, I believe, did Dr Johnson; and this is an amiable fowl, without any prejudices, which is more than even Boswell could say for the lexicographer. Nothing but the fine roll in his name

brought upon him that great piece of poetical injustice by which Milton made him cousin-german to the serpent in that fine passage where we see the malignant spirit as he

On the middle tree, and highest there that grew,
Sat like a cormorant.

Now, there is nothing akin to evil in this bird's disposition; he is very gentle, and easily domesticated, though I should not advise my friends to make the experiment. I kept one myself for a month, and, at the end of that time, was extremely happy to bestow him on a zoological society: not that he ever made any vicious use of his formidable beak; but as a moderate-minded cormorant expects full six pounds of raw steak or fish per diem, and can dispose of more if it comes in his way, you can suppose him precisely the sort of visitor more pleasant to keep for a week than a fortnight. My guest was always peering about the kitchen, to see what he could lay his beak upon, and the bare perspective of a fin was to him what the sight of the brandy bottle is to the drunkard: more than once, he carried off the fish destined for the parlour dinner; and his final escapade was to walk up boldly into the drawing-room, and fish all my wife's gold and silver favourites out of the aquarium. No, I don't recommend a cormorant for a pet; but as an outdoor acquaintance with whose commissariat you are unconcerned, you will find him interesting enough. If you ever visit Yarmouth, you will find it worth your while to lounge near Breydon Water when the tide is on the turn, and watch these birds fly in one by one from the woods, perhaps miles off, where they have been resting. Some unerring instinct teaches them when the returning tide brings their food, just as, if you have patience to wait till it ebbs, and the cormorant leaves the shore, you may see his place taken by other birds, who feed on the bare sands. The cormorants sit, like the gravest philosophers, on a rail, post, or any convenient perch at hand, each intently watching the water before him. Woe be to the fish that shews itself, be it ever so dimly: down pounces the enemy, and it is impaled to a certainty on the horny beak of his upper mandible! An eel is his favourite *bonne bouche*, and he goes through a little ceremony when he has had the satisfaction of taking one. He doesn't swallow it at once: holding his wriggling prey in that merciless beak, he dashes it against his post of observation three or four times, perhaps that it may not wriggle inconveniently in his interior; perhaps for the same cause as your cook beats her beef-steak; he then tosses it into the air, catches it dexterously by the head, and the eel goes down that baggy throat at a single gulp. The cormorant is a handsome bird in his summer plumage; black and shining from crest to tail, the only relief to his sombre costume being one white patch on the thigh. He visits us in the spring, from the south of Europe; inhabits India and China, where John Chinaman catches him, and teaches him to fish for a master as well as for himself. The shag is a smaller variety, in a deep-green suit, with nearly the same habits as its larger kinsman. The cormorants and the gannet are the only members of the *Pelecanidae* which count as British birds, though we were very near an addition, on Sir T. Browne's authority, in the shape of a pelican shot on Horsey Mere, 1663. However, after describing this 'fowl, which none could remember on our coast,' with his usual quaint felicity, Sir Thomas adds naively: 'About the same time, I heard that one of the king's pelicans had been lost from St James's; perhaps this might be the same.'

At one time, Norfolk boasted eight varieties of gull; from that magnificent larus, the great skua, half vulture and half gull—that still repays the protection afforded it in the Scotch islands, by waging war with the eagles, which have too decided a penchant for

* Fifty years back, that splendid bird, the glossy ibis, was familiar to our mariners, under the name of the black curlew. It is now never seen out of a museum. The stork appears at long intervals; a very fine one was shot at Wretham in 1838.

lamb to be approved by the farmer—to that fairy among water-fowl, the little gull. Besides the common gull, we now only possess the black-head (*Larus ridendibus*). Almost in the heart of Norfolk, twenty-five miles from the sea, and without any river communication with it, lies Scoulton Mere, a large solitary broad, said to be a fragment of the ancient estuary which once divided the county. There is a boggy island in the midst of the mere, a few willows scattered about it, and bristling with reeds all over; this island has been from time immemorial the chosen nesting-place of the black-heads. For once at least in a lifetime, it is, I assure you, quite worth while to face the bitter wind of a March morning by Scoulton Mere, to watch the gulls come, flight after flight, from their southern winter-homes, sweeping in the dawn, so gray and bleak, over brown fields and hedgerows, with a ghostly rushing, and a shrill cackling cry. They first appear at Scoulton towards the end of February, and the whole body is there by the middle of March. They spread themselves widely over the country in quest of food, and follow the plough in companies. The farmers look kindly on these gulls as great devourers of grubs and worms, although their bill of fare is by no means limited to this class of the Articulata; cockchafers, beetles, and most small deer of that sort, either flying or creeping, are hunted down by the black-heads. Though they bear this name, the summer hue of their head and neck is in reality dark brown, the rest of their plumage white and gray. When they first come to Scoulton, their heads are white, and begin to darken towards the end of March; in less than a week, every head is dark brown, and this not through moulting, but real change of colour. The birds at Scoulton have a keeper, and they increase in number, notwithstanding the large quantity of eggs—more than thirty thousand in an average season—taken from this island alone. By the end of July, the gulls are all gone, both young and old, to disperse themselves over the sea-board, or that of Sicily and Southern France. Sir T. Browne says, 'in hard winters, elks, a kind of wild swan, are seen in no small number;' and he was the first to observe 'that strange recurvation of the windpipe through the sternum,' which is so ably exhibited and described in Yarrell's *British Birds*. This 'elk' is the Hooper swan (*Cygnus ferus*); it visits the Scotch lakes every winter, and even makes its large nest of coarse herbage of rush, and brings up its young in the Orkneys; but to our coast it only comes in very severe weather, generally flying along the sea-board in flocks of from twenty to thirty. Its note, of which it seems very chary—I have only heard it once—is a loud whistling hoop, hoop, from which it takes its name. Far more impressive than the cry of this bird is the unearthly sound they make with their wings in flight. I can never forget the time when I first heard it. I was walking alone on a solitary shore one wintry afternoon, just as the day was closing in. The morning had been bright, but towards noon, clouds, heavy and dark, as if laden with the tears of human grief, had come creeping, creeping up over the sea, which now lay under a leaden sky, as leaden as the sky itself, and in that death-hush which precedes a storm. The deep sorrow of the new-made grave weighed down my spirits at that time, and, buried in sad thoughts, I was not conscious of the coming of the wild-swans till they were close at hand. Their proportions shewed gigantic, the snowy plumage dazzling against that sombre sky, as they sailed with outstretched wings and necks straight over my head in a compact wedge-like body,* with a grand sonorous clangour like that of a mighty wind rushing through harp-strings. The stillness, the intense solitude, and the

mood on which the apparition broke, all served to heighten the thrill of wondering awe with which I watched the wild swans hurrying on to their resting-place before the storm.

As far as we know, the wild swan never bred so far south as Norfolk; but before drainage had broken up its nesting-places, the gray-lag goose (*Anser ferus*) made its home of sedge on the margin of a broad, laid its smooth, yellowish, ivory eggs, and brought up a family of eight or ten young ones, well content to stay with us all the year round. At present, it is only a chance-visitor; some winters, it will be plentiful enough, then for two or three seasons together, perhaps not a gray-lag is to be seen. Indeed, all migrant water-fowl are very capricious visitors. A sharp winter, with frequent occurrence of heavy gales from the east and north-east, is sure to bring them. After a few hours of these gales, the waters will be dotted with wild-fowl from the north, when hardly a single individual was to be seen the day before—a fact observed repeatedly through many years, and which confirms my belief that these birds are sensible of an approaching change in the weather, and begin their long journey before it takes place. The gray-lag sets up a claim to be the veritable goose which saved the Capitol; however this may be, it is enough for an Englishman to recognise in it the undoubted progenitor of our noble national institution, the Michaelmas-goose. Long may it flourish! Let revolvers and rifles laugh the gray-goose-shaft to scorn—let the porcupine present his quill, steel-pen on end, in lieu of the old gray-goose quill—but never shall any creature, were it even the bird of paradise, presume to displace the savoury fowl of good Queen Bess! The gray-lag has a wide geographical range: it summers as far north as Iceland, is abundant in the central parts of Europe, in Italy and Corfu, and counts in the fauna of Northern Asia, China, and Japan.

Far more rare than the gray-lag in Europe, and, indeed, so rare everywhere, except in the extreme north of Asia and Siberia, that its habits and nesting-places are almost unknown, is the red-breasted goose (*Anser ruficollis*), so called from the splendid chestnut red of its neck and upper part of the breast. I have a specimen of this rare bird, and I cannot resist the temptation of letting the world know how I came by it. One very cold day in February, some years ago, I was riding across the country to pay a visit, and overtook on my road a lean hungry-looking woman and a boy, dangle a string of wild-geese between them. I was in a hurry that morning; but somehow the sight of beak and wings is irresistible to me, even if it comes in the shape of a sparrow, so I reined in my horse to take a look at the wild-fowl. Brents all of them, dark and dingy. Another look. No, by Jove! What head was that with the white patch between the beak and eye? Did that gleam, like ruddy fire-light, ever shine from the plumage of any Brent? If, my reader, you are not a naturalist, at least you may be a book-collector; if so, recall the tremulous delight which fairly took away your breath that never-to-be-forgotten day when, among the sermons, dirty novels, Cockers, whole-duty-of-mans, on the most unpromising of book-stalls, you came plump upon that very scarce black-letter, destined to be the glory of your library, the envy, as its history is the bore, of all your friends. Are you neither naturalist nor book-collector? I despair of 'insensuing you,' as Paddy says, into the wonder, the enchantment, the eager flurry with which I fished from the brents a superb *ruficollis*, laid him across my saddle, turned my horse's head at once, and carried him triumphantly to be set up at Norwich. I was urged to this prompt disposal of my prize by the memory of a dire misfortune suffered by a Norfolk naturalist some winters before. Like myself, he had the luck to light upon a red-breast in Norwich market; he also made the prize his own, with a couple of brent-geese, chuckling vastly, no doubt, as he laid down the

* The hooper flies in a flock gathered into a wedge-shape form like wild-geese. Bewick's swan flies in long strings.

common price of wild-fowl for the three. But he carried them home, and through some fatal mistake, one of the brents was sent to the bird-preserver—the *rara avis* actually plucked and cooked. I have no words to paint the horrors of the bereaved naturalist, when, after a capital dinner, he found out his cook's blunder. Thystes alone could have fully sympathised with him; let us hope the recording angel was able in some slight degree.

The brent (*Anser torquatus*) in whose company I found my treasure, though dull of plumage, and the smallest of its tribe, has the recommendation of being a very good bird for the larder. Wild-geese, in general, feed on grain, young plants, and clover shoots; but the brent fattens itself on sea-weed, and has the taste of a gourmand for laver. We rarely see it on our inland marshes; it loves the muddy flats and sand-banks of our shore. As soon as the ebbing tide leaves these bare, you may see the brents flying in skeins from the sea to their feeding-places, with a noise exactly like that of a pack of hounds in full cry. They stay on our coast till late in February, when they begin to migrate in successive flights, the young or more tender birds staying almost into April. I have watched the flock about to depart collect on some muddy flat, darkening it with their numbers, then rise slowly in circles, as if describing a vast spiral staircase, till they hung high in the air, and slowly moved off over the ocean northwards, to summer in the polar sea.

OUR SUMMER MONTH AT LIMPETER.

So familiar is the aspect of the ocean, and the manner of life at the sea-side, to almost the poorest of us, and the most inland—thanks to railways and cheap trips—that we can hardly understand that it was quite otherwise with our forefathers of the last century, who, in addition to the difficulties of transit, were deterred from marine excursions by a foolish notion that the air of the sea-coast was unhealthy. One wonders what the pent-up city people did in those days, to get themselves well quit of the dust and din of town. They were not, it is true, quite so crowded as at present, nor, perhaps, worked so hardly, and could certainly reach the country with greater ease, which now lays so many larks of streets away from many of them; but they must have pined for that thorough change, too, without which it seems to us middle classes that we must perish. How jaded, and worn, and dull we get after our eleven months' pursuit of the 'almighty dollar,' in mart and counting-house, in courts and in chambers, at the desk and in the pulpit! and how fresh and rejuvenescent we all return from what the pert law-clerk designates our 'sniff of the Briny,' and the more eloquent divine, our 'contemplation of the great work of creation in its sublimest aspect.'

This departure coastwards has become as much a habit with us as migration with the swallows; and we imagine that it was always so; that Methuselah could never have set the early annuity-offices at defiance but for sea-bathing, and three or four weeks in autumn at some Asiatic Brighton. As for ourselves, our earliest recollections are connected with the delights of the sea-side, where it has ever been holiday, and wherein our sojourn has always seemed too brief. The pleasantest playtime of our lives, perhaps, was spent upon those sparkling sands, which, spade in hand, we built up into ramparts against the flowing tide. That practice would now afford us little amusement, and no hope, albeit we do things quite as delusive yet, and less amusing; such as ignoring Christmas-tide till the bills come in a great flood, or endeavouring to keep them out with a twenty-pound note, when we ought to have laid by a hundred. All ports and recognised 'watering-

places' are hateful to us, because one is there obliged to 'dress' and behave as Society takes it into her dotting old head we should do, whereas the chief benefit of our exodus consists in the getting as much as possible out of artificial life, and returning to that of the noble savage. No hats—those unmistakable badges of the slaves of fashion, detested and yet worn by all, because all are cowards—but any head-coverings we please that are comfortable and cool, and can be folded up pillow-fashion, to shield the skull from the hard shingle, or be thrust into one's pocket without injury, when we prefer to let the sea-breezes lift our hair. No 'evening things,' and bother of changing garments daily, unless one gets wet through, as is probable, among the Wonders of the Sea-shore at low-water. No delicate boots, no attenuated umbrellas, no flimsy objections to be seen smoking the pipe of tranquillity in the street—which is not, however, a street, but only a broken and irregular line of summer residences, each peering anxiously over the other's shoulder, in order to obtain that indispensable advantage, 'a view of the sea.' We are familiar with a score of such marine paradises, from the Bristol Channel to the Firth of Forth, and would gladly visit any of them again save one—wherein the shadow of Death once fell to linger for ever, and where for us the blue waves would break upon the shore with a too mournful monotone.

This last autumn we went to Limpeter, which, as everybody knows, is not to be reached by railways, and where there is not very good landing even for packet-passengers. A chain of hills, of various steepness, lies between it and one considerable town, while a broad arm of ocean separates it from another. Harris and Roberts, fellow-labourers in the Stamp and Wafer Office with the present writer, were my companions this year. I always take my pleasure trips with two others, because, of three persons, two are perfectly certain to disagree, and to be extra civil, in consequence, to the third, whose position, being of a conciliating nature, I generally manage to occupy. Roberts is the most polished, and not the least supercilious of officials, while Harris is rather nervous and fussy, so that I knew, if a difference should arise in our little party, between whom it would occur. We drove over the hills to Limpeter in a carriage and pair, procured from the post-town, and the horses went at a considerable pace.

'Don't you think that the man is going too fast?' observed Harris, apprehensively, as we came down the first of the chain of hills with rather a lateral swing.

'Perhaps,' said I; and, indeed, I was quite of Harris's opinion.

'I suppose,' remarked Roberts coolly, 'that the driver knows his own business as well as any of us the stamp-and-wafer trade; and he has, at least, been as much accustomed to the horses.'

Harris was silent for a time, but by no means comforted. Presently, we got such a bump in the hollow of the road, as sent two of us up an inch and a half from our seats, and Harris, who is very light, a couple of inches.

'Gracious goodness!' cried he, 'this is terrible! Hi, driver, hi!—go slower, will you? Why, the man is deaf!'

Our nervous friend, who was sitting on the back seat, arose therefrom, and, steadying himself with difficulty, seized hold of the driver's arm, and shrieked out: 'Not so fast! You'll upset us, you idiot!—slower, slower!'

Imagine, therefore, Mr Harris's discomposure when the man smiled good-naturedly, touched his tongue with his finger-tip, and administered a tremendous cut with his whip to the near-horse, which seemed only rather less inclined to run away than the other.

'Good heavens!' ejaculated Harris, staggering back, 'this driver is deaf and dumb!'

'It is very lucky for him,' returned Roberts

philosophically, 'or you would have broken his tympanum. But we certainly are going a good pace.'

The objects by the roadside were indeed flying past us with a great velocity, and it was evident that the man was quite unaware of our wish to slacken speed. We were just upon the brow of another hill, too, and I perceived Harris measuring with his eye the distance between his seat and the ground.

'You had better not jump out, my dear fellow,' said I. 'Can't either of you talk with your fingers to him?'

'I used to be able to,' replied Harris doubtfully. 'I know a, e, i, o, u.'

'Try him with them, by all means,' exclaimed Roberts sardonically. 'What do the consonants signify?'

'Look here, driver,' cried Harris at the top of his voice—though if our voices had been piled together they would not have reached the poor man's sense of hearing—'look here—but keep your eye upon those horses at the same time—I'm going to talk to you;' and he pinched his arm to draw his attention. 'G, do you see that? (It is G, isn't it, Roberts?) Yes. He sees it. What intelligent beggars these deaf and dumb folks are! There, that will do for Gently, without the rest of it, I'm sure. G!' And our friend pointed to the impetuous steeds in explanation that it was to them that he referred.

The driver, who was all good-nature, gesticulated and smiled in token of apprehension; then turned round upon his seat, and applied his whip double-thonged, and with what is popularly termed 'a vengeance,' to each of the astonished animals. We descended the hill at the speed of a centrifugal railway carriage, while Harris held on to the seat with his fingers talonwise, and even Roberts took one of his hands out of his pockets—a thing which he is never seen to do unless in the greatest extremities. The driver was, after all, a very excellent one, and could not be expected to know that G stood for *gently* only; it seemed to him, on the contrary, that Mr Harris was dissatisfied with the pace, and had requested him to *gallop*. We reached Limpeter quite safely, and certainly in a surprisingly short time.

It was there that Harris first openly ventured to express regret that he was not married, and not, it must be owned, without some excuse for that humiliating confession. The very air of Limpeter was musical with the laughter of children, while the domestic picnic-parties upon the cliffs were very tantalising, and so numerous that—in that favourite *restaurant*, the east Bay in particular—you could scarcely keep your feet out of pigeon-pie. Moreover, in every household, one or more young ladies seemed to be staying, who lavished upon Paterfamilias endearments that aroused the most envious feelings of the beholder, and which, taking into consideration the existence of his own charming consort, we held to be superfluous in a very high degree. They sang to him in that beautiful beech avenue where the trees meet overhead like a cathedral roof, and the light falls green and golden, as through a painted chancel-window. They played to him too—for late into the still summer-nights we heard their brisk duets and their bewitching solos flow through the half-opened casements, at which there sat the shadow of Materfamilias knitting. They accompanied him, if it was not wet, in the early mornings, 'to see him off' by the steamer which took him across the water to his business in the opposite town, and came down, in company with his wife, to meet that Bashaw on his return by the afternoon boat. What wavings of handkerchiefs, what kissings of hands—their own hands of course, but still the thing was aggravating—to welcome or to bid adieu to an elderly gentleman who wore spectacles, and carried a great bulging umbrella! And how, as a matter of course—like the pope, I suppose, when people kiss his toe—did he receive these charm-

ing attentions! A condescending nod of his bald head, three fingers held out to be shaken, and an 'I shall be back at five, my dear (*his* dear, indeed!), and tell my wife I will bring a brace of birds.' These creatures were thinking of their dinners, while the very loveliest lips in the world were bidding adieu to them.

A pretty sight was that long line of everyday passengers, winding over the rocks and sands to meet the boat, which took them to the steamer at low tide, when the little pier was not accessible; and the partings (not such as have any pain in them, but 'good-byes' for a few hours) were pretty too—at least, upon one side. It was charming to see the fair ones standing upon some picturesque rock draped in sea-weed, and bewailing their deserted condition, like so many Ariadnes in Naxos. All day long, they and the wife, their chaperone, paraded the beach, and played with the children on the sands, or in Limpeter Street—in which public thoroughfare we have seen as good a game at battledoor or le gras as in any room—or went down to the Ladies' Bay to bathe. Machines are unknown at Limpeter, so certain bathing-places are set apart for each sex, and kept as far as possible sacred. Such a regulation is excellent, if one is only made aware of its existence; but the unfortunate Harris having strayed along the west margin of the sea on one occasion, where the cliffs are quite precipitous, found himself 'lady-bound'—cut off from communication with Limpeter by three or four dozen ladies, some in the water, and some of them out of it, but all of them in less than demi-toilet. It is a horrible thing to lose one's dinner, which he knew at once must happen to him, but more dreadful still is it to be at the foot of an inaccessible crag, below high-water line, when the spring-tide is coming up, which was his unhappy condition likewise. Rather than have outraged propriety, Mr Harris would have perished, and indeed we are well assured that it would have killed him in the subsequent reminiscence, could he even have strung up his mind to the pitch of running with his eyes shut through the Ladies' Bay. There was, however, one alternative, and disagreeable as it was, he accepted it without hesitation. He waded, waist deep, to a rock whose summit he had observed to be not entirely covered by the waves on the preceding day, and there remained for hours, with his eyes modestly fixed out to sea, until a boat put out to his relief, and rescued him from that unpleasant situation. Mr Harris obtained an enormous reputation in Limpeter by this act of self-sacrifice, as well as establishing the character of us, his friends, who were supposed (and with justice) to be capable of deeds equally heroic. More than one Paterfamilias patronised us, and through them, more than one young lady began to smile upon our desolation. We endeavoured to beguile their tedium during the absence of the head of their house, and have some reason to think that we succeeded. We lent our voices to the chants in the avenue choir; we carved the chickens at the family picnics, carried provision-baskets as though we were light-porters, and children over slippery places, as though we had had the charge of a nursery for years. Roberts preferred the houses where 'the dear children' were, because when we were asked into luncheon after the morning's ramble, we found better things to eat—it being the young people's early dinner—than at childless homes. It was the kind attention which Miss Lucy Canonberry paid to the little ones with whose parents she was staying—cutting up their food into minute portions, while her own mutton-chops grew cold—which first attracted Mr Harris's heart towards that young lady. The good sense and strength of mind which she exhibited on a certain trying occasion on Limpeter beach completed his capture.

It was on a Saturday, when excursionists by steamer swarm in peaceful Limpeter like locusts,

and throng the inns with drunken merriment, and the streets with brass bands—frequenting, in short, such places as are open to them at home, and neglecting the sea-beach, which one would have thought they came out to enjoy. Or perhaps we are writing unjustly of them, because they disturbed our selfish quiet once a week, and ate and drank (especially) all the provisions in the place. The sands were at all events quite deserted upon that Saturday—although two steam-boats full of people were in the village—when we three men and Miss Lucy, and a little child who 'did propriety' for her, when Materfamilias was engaged indoors, were strolling upon them, watching the sunset. Harris was repeating some verses of somebody or other in commendation of that event in a tone as though he was about to cry—Miss Lucy's head being so close to his own that there was no need to raise his voice—and they were both so rapt, that they paid no attention to Roberts's remark, that it was an abominable shame that the people of Limpeter would not catch one shrimps for breakfast.

'Hush!' whispered I, gripping hold of his arm upon a sudden, 'what is that on the beach yonder? You have better eyes than mine, but it looks to me like a dead body.'

'Good heavens!' cried he, startled out of his accustomed serenity, 'it is a dead body; it is a drowned man cast up by the waves. Get the girl and the child away.' And off he strode to look at the thing.

With as little abruptness as possible, I gave Harris to understand that there was something lying under the cliff that his companions were not to see; and off they went at a tolerable pace towards home.

Then I turned back to contemplate the unhappy mariner, whom the sea had cast up on our beautiful shores. The supposed corpse—attired in what Mr Burns calls 'a cutty sark' of pink flannel—was at that moment approaching me by means of a series of wild leaps; and Mr Roberts, of the Stamp and Wafer Office, dressed in the height of fashion, was retreating very slowly, and with his face to the foe. It was a living allegory of Civilisation giving way before Barbarism. The corpse, who was dishevelled and dirty to an extraordinary degree (and had certainly not been in the sea or other great water for some period), was giving utterance to the most frantic yells, from which I could gather but two intelligible statements. The one was, that his name was Macgregor; and the other, that he was desirous of shedding Mr Roberts's heart's blood. It was an appalling sight, this dancing savage, possessed by the demon of liquor, and yet ludicrous in a high degree, when compared with the calm demeanour with which Mr Roberts endeavoured, as it seemed, to exorcise it with a little wooden spade that he had been carrying for the child—for my friend is of the most kindly disposition.

'Blood, blood!' ejaculated the attacking force, elongating that awful monosyllable in really a very ingenious manner; 'blood, I say. Ha, ha! me name is Macgregor!'

'Do let me persuade you to put on your trousers,' replied the retreating column. 'You have no idea how cold it is for your legs.'

It was, after all, only a poor intoxicated excursionist, who had come down to the beach to bathe, and having taken off his clothes, fallen instead into a lethargic slumber, from which Mr Roberts had awakened him with the flat of the spade. The one policeman who pervades the county, and is marched into Limpeter upon excursion-days, at this moment hove in sight; and the effect of his blue coat upon the behaviour of the Short-shirted was miraculous. He was gradually persuaded into all his garments except his boots, in which he preferred to insert his hands, under the mistaken impression that they were his feet; and so, on all-fours—for he clung to the idea with the usual pertinacity, and illustrated his view by

practical example—he made his way to the pier, where his friends were waiting for him.

But what struck all of us as being the best part of the business, was the sight of Miss Lucy Canonberry with Materfamilias bringing down brandy and restoratives, and followed by the landlady with blankets, for the resuscitation of the supposed cast-away. It was so much the more sensible thing to do, than to have fainted away, and required sal-volatile for herself, as some young ladies would have done.

As for Harris, as we said before, his chain was riveted from that moment; and whereas Roberts and myself brought nothing back from Limpeter save some sea-anemones for my sister's vivarium, our friend picked up a wife there upon the sea-beach, and is no longer a hermit-crab, living, bachelor-fashion, in other people's houses, but has an establishment of his own, presided over by the late Miss Lucy Canonberry.

HOW WE GET MAUVE AND TYRIAN PURPLE.

Of all knowledge, scientific knowledge, doubtless, holds the foremost place; and each science is so intimately connected with chemistry, that I think it may be fairly stated, that chemical science is the most important and most practical of all. A popular chemist has indeed asserted, that the civilisation and intellectual progress of a country might almost be measured by the quantity of sulphuric acid consumed in that country.

One of the finest and most extensive fields of chemical research and application, is met with in the art of dyeing—an art which has been practised from the most remote periods of antiquity. It is, in fact, impossible to fix either the date of its origin or the place of its birth; all we know on this head is, that dyeing was practised with some skill by the ancient peoples of India, Persia, Syria, and Egypt. We have no clue to the processes they employed, for the Greeks and Romans, who learned and practised them likewise, have neglected to describe them. Among the moderns, we find this beautiful art flourishing first in Italy, as a consequence of the commercial relations established between the Venetians, the Genoese, and the eastern nations. The almost sudden development of the physical sciences at the latter part of the eighteenth century, exercised an immense influence upon the dyeing art, which, up to that time, had consisted of a collection of mysterious receipts and empirical practices, but which is now submitted to rational and scientific principles.

Discoveries of new colouring matters, and their application to dyeing, are being made every day. Some are, indeed, destined only to an ephemeral existence; others, on the contrary, will survive for ages, and be mentioned by future historians as marks of immense industrial progress. To the latter category belong the aniline dye, extracted from coal, and the murexide dye, extracted from guano. The idea of extracting colouring matter from coal might appear preposterous even to the professional scientific man himself, were not other transformations, equally marvellous, of almost everyday occurrence in that most wonderful of all workshops, the chemical laboratory. Let us take a rapid glance at the operations to which coal must be submitted in order to obtain from it *aniline*, the substance which, in certain circumstances, gives birth to those brilliant violet and red colours (mauve, fuchsine, &c.), which are now making such a revolution in the tinctorial world.

When coal is submitted to dry distillation in large closed retorts, many products are immediately obtained. First, and among the most important, the carburetted hydrogen gas which lights our streets,

and which is distributed into the towns from the gasometers by iron pipes. Second, coke, which remains behind in the retort, and is used for a variety of purposes; and which burned hard, serves for the construction of the electrical apparatus called Bunsen's Battery. Third, water containing a certain amount of ammoniacal salts, which is consequently employed in agriculture, and to produce sulphate of ammonia, a most valuable salt. Fourth, the substance called *gas-tar*, which distills off out of the retorts. This is a semi-liquid product, of a very complex nature. It was so little known a few years since, that, in France, it was actually burned under the retorts to economise the other combustibles! Now, this gas-tar furnishes colouring matters of great value. To quote two French authors, who have written on this subject since the lucky discovery of Mr Perkin, of which I shall speak presently: 'Coal has not yet been transformed into diamonds, but we can extract from it a violet colour equal in value to gold itself!'

Aniline, one of the most remarkable of organic compounds, is found in gas-tar. It is a colourless oily substance, which is obtained likewise by the action of potash upon indigo, and by various other methods practised only in the laboratory. It comports itself with chemical reagents as an alkaloid, such as quinine and strychnine, and resembles much by its chemical nature the substance called nicotine, a poisonous alkaloid extracted from tobacco. This interesting product was formerly studied by Professor Runge, Dr Hoffman, Gerhardt, and many other chemists. It has been quite recently found in the vegetable world by Dr Phipson, who has discovered it in some species of fungi (*boletus*), which become blue when they are cut open with a knife.

It would be too tiresome an operation to extract aniline directly from gas-tar, which only contains small quantities of it, and where it is mixed with a great variety of substances, such as ammonia, benzine, toluin, phenic acid, leucolin, naphthalin, and some others less known. The tar is therefore submitted to distillation, and the result is a carbonaceous matter which remains in the retorts, and some volatile oils, known as coal-oils, which pass over into the recipient. These oils are of a very complex nature, and contain compounds which distil at different temperatures, so that, by a kind of fractional distillation, two varieties of them are obtained—namely, the 'heavy oils' and the 'light oils.' The former are principally employed for preserving railway-sleepers and similar wooden constructions, on account of their powerfully antiseptic properties. They have also been found in the French hospitals to act beneficially in the treatment of ulcerated wounds; for this purpose, these black matters are mixed with gypsum, or chalk. The light oils, known commonly as coal-tar naphtha, consist of a mixture of benzine, toluin, phenic acid, &c. They are distilled to obtain benzine, a liquid extensively used to dissolve gutta-percha, to manufacture varnish, for dissolving greasy matters, and so cleansing tissues, clothes, and gloves; besides which it is sometimes employed as a combustible for lamps.

Now, when nitric acid is added carefully to benzine, and the mixture distilled with proper precautions, a reddish liquid passes over. This is called nitro-benzine, and when purified, appears as a yellowish liquid with a delightfully fragrant odour, like that of essence of bitter almonds, for which it is most economically substituted in perfumery, in the manufacture of scented soaps, and in confectionary. When nitro-benzine is acted upon by nascent hydrogen—which is effected when it is mixed with zinc filings and weak sulphuric acid—it is transformed into aniline, the colourless oily substance I described above; and when this aniline is oxidised by chromate of potash, or any similar oxidising agent, it is transformed into one of the beautiful dyes which form the subject of this paper. A French chemist has stated

that the relative value of this dye (mauve), and that of the coal whence it derives its origin, 'may be readily appreciated when we assert that whilst the coal employed to obtain it would hardly sell at one farthing per pound, a similar weight of aniline dye is said to be worth sixty pounds to eighty pounds sterling!'

We are indebted to an English chemist, Mr Perkin, for the discovery of the manipulations by which aniline is transformed into this precious dye. For this purpose, it is not necessary to take aniline in its pure state, and then oxidate it. Mr Perkin took impure sulphate of aniline, such as is found in commerce, and mixed it with a certain quantity of bichromate of potash. The mixture was allowed to repose for some ten or twelve hours, when a blackish-looking powder was deposited. This was collected upon a filter, and washed with water. The powder thus obtained was dried at boiling-water heat, and then digested with coal-tar naphtha, this liquid having the property of dissolving out of the powder a peculiar brown resinous substance which constantly accompanies it. The coal-tar naphtha 'dissolves out' the brown substance without attacking the colouring matter. The latter is then dissolved in wood-spirit, which solution, when evaporated in a water-bath, yields the new colouring matter in its pure state.

To dye stuffs of a purple or lilac colour (mauve), a strong dissolution of the colouring matter—and, in preference, an alcoholic solution—is added to a weak boiling solution of tartaric or oxalic acid, and the silk or cotton stuffs are plunged into this bath when cold. To dye woollen, it is more advantageous to boil it in the above-named liquid, with a little sulphate of iron, to wash it out, first with water, afterwards with soap.

The great merit of the aniline or mauve dye reposes in the beauty and permanency of the tints it imparts. Moreover, its power of coloration is so great, that very slight quantities suffice to dye a considerable amount of material—in other terms, to give colour to a large number of vats.

Let us now turn to murexide, or the guano dye (majenta), which appears to be the identical colour known in history as the famous Tyrian purple. The ancients prepared it from certain species of shell-fish (mollusca), but their process has not come down to us. Murexide, which has recently been again introduced as a dye, stands a fair chance of never more disappearing. The substance called murexide was formerly discovered by an English chemist, Dr Prout, and described by him under the name of *purpurate of ammonia*. It was called 'murexide' by Liebig and Woehler in their magnificent memoirs on the products derived from the decomposition of uric acid. But, strange to say, the progress of science has turned in favour of Dr Prout's views, and we are told by modern chemists that *purpurate of ammonia* is its proper name.

To obtain murexide, or purpurate of ammonia, we must first procure uric acid. Now, the substances from which this acid is extracted in the laboratories are the excrements of serpents or of birds, especially guano, which is known to be rich in urate of ammonia. It is from guano alone that nearly all the uric acid furnished by commerce is obtained. To this end, the guano is first digested with diluted hydrochloric acid; the insoluble matters are allowed to deposit, and the clear liquid decanted off. The acid dissolves carbonate and oxalate of ammonia, phosphates of lime and magnesia, &c., forming a liquid which is valuable as a manure, or which may serve for preparing ammoniacal salts, phosphates, or oxalates. As this liquid is so valuable, the same quantity of acid is applied to several lots of guano, until the acid is nearly saturated, and will 'dissolve out' no more salts. The insoluble residue, which contains all the uric acid, is washed with fresh quantities of warm hydrochloric acid and

water, after which it is dried. This residue, then, contains uric acid mixed with a certain proportion of sand or clay. It may, however, be immediately employed to produce murexide.

When uric acid is acted upon by nitric acid, it gives birth to a host of very interesting compounds, which have been investigated by Prout, Liebig, and Woehler; and when uric acid is dissolved in nitric acid, and ammonia is added to the dissolution, a peculiarly striking purple body is deposited; this is the purpate of ammonia (murexide) of Prout. It would be impossible here to describe all the numerous compounds derived from the little white crystals of uric acid when they are submitted to the oxidising influence of nitric acid; the most important of them, however, is murexide. In practice, the latter is obtained by dissolving out the uric acid of the guano residue with nitric acid, and adding a certain amount of ammonia to the liquid, in small quantities at a time, to avoid any sudden rise of temperature. The whole is then slightly warmed, and, on cooling, deposits murexide in the crystalline state. It is, in this condition, a most remarkable substance, and when once seen, is never forgotten. It may be described as consisting of small quadrangular crystalline plates, which reflect light of a green metallic lustre, like the wing-cases of a golden beetle. Two of the prismatic sides of a single crystal of murexide reflect this green metallic light, whilst the two others reflect only a dull brown light. When seen by transmitted light—in other terms, when looked through—these little crystals appear like so many garnets of the finest claret tint; when pulverised, they furnish a red powder, which, under the burnisher, becomes of a brilliant metallic green. Murexide is very slightly soluble in water, but gives to that liquid a beautiful and most intense purple colour. In potash, it dissolves with a splendid blue colour; so that, by its optical properties alone, murexide may be looked upon as one of the most wonderful substances ever discovered.

In the dyer's hands, murexide has furnished brilliant carmine, purple, orange, and yellow tints, according to the mordant, or metallic salt, employed in conjunction with it. The best results have hitherto been obtained with salts of mercury for carmine or purple tints, and with salts of zinc for orange or yellow dyes.

For instance, to dye silk of a purple hue, a solution of murexide and corrosive sublimate is mixed, the silk-stuffs are plunged into it, and stirred constantly. They slowly absorb the colour, and are dyed of a lighter or darker tint, according to the strength of the bath, and the time they have remained immersed. With woollen, some difficulties have been experienced, on account of the reducing action the latter possesses with regard to murexide; to dye it purple, corrosive sublimate and oxalic acid are employed with the murexide, or sulphate of mercury and tartrate of potash and mercury. But with these mordants it is necessary to use some oxidising agent, such as chlorine-water or bleaching-powder. After the woollen has passed through these salts, it is dyed in a solution of murexide either pure, or to which some oxalate of soda has been added. Another method of dyeing with murexide, consists in plunging the tissues into a colourless dissolution of uric acid in nitric acid. They acquire a purple colour, when they are afterwards exposed to heat, and the colour is fixed by passing the stuffs through a bath of mercury or of zinc.

Murexide, it appears, is also capable of forming lakes, which are nearly insoluble in water, and which possess very vivid tints.

Such, then, is a slight history of two of the most remarkable substances ever introduced into the chemical world, whether we consider them as purely scientific curiosities, or as useful and important elements of industry. The latter was termed 'murexide'

by Liebig, from the name of the shell-fish murex, this mollusca being one of those supposed to have been employed in the production of the ancient Tyrian purple.

SHADOW THOUGHTS.

Who would fardels bear,
To grunt and sweat under a weary life,
But that the dread of something after death—
The undiscovered country, from whose bourn
No traveller returns—puzzles the will? *Hamlet.*

The better part of life is Sleep,
Sleep unawakeful, dreamless-deep,
(For Dreams, false mirrors of our life,
Are faithful in their shares of strife)
Our fullest joy—our only bliss
Unmixed with pain—Forgetfulness!

That we are born at all, to most
A gain that we had rather lost;
That we are now, a gift, this day
That most of us would cast away;
That we shall die, a thing to hear
With smiles, but for the Nameless Fear.

Thou toil'st this weary day, my brother,
That, haply, thou mayst toil another,
And 'twixt the two falls careful Sleep.
Scant harvest from such seed to reap!
No golden meed, that one should gain
Forgetfulness of each day's pain!

Ah, how is this, that I and Thou,
(Frown as thou wilt) who hear'st me now,
Would break for aye this lengthening chain—
Would cut the Silver Cord in twain—
And cancel Hope, the ever-strong,
With such a Fear, as *must* be wrong,
And give back those far lights that quiver
Yet through the storm-clouds to their Giver,
For utter dark, and such blank peace
As falls to the calm things that cease!

The scanty stores of Prayer and Praise
Accepted in our youthful days,
The now and then repentant tears
That sparkle through our later years,
And those few seeds we love to tell of,
And think at heart so overwell of—
How gladly would we barter them
(Each rare and burnished little gem
That with complacent smile we've set
In Memory's roomy cabinet)
For half the ill we've done and thought,
In others praised, to others taught;
For well we know, how'er it *seem*,
Which side, when weighed, will kick the beam.

In truth, my brother—if we think—
The balance, every day, must sink
More earthward, and the Shapeless Fear
Distincter grow, each day more near.

Ah, blessed Faith, what purest saint
Doth more than make yon shadow faint!
Ah, cursed Fear, we're not for thee,
What man might bear his misery!

EMERITUS.

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